A. Cover Sheet *(Attach to front of proposal.)*

1. Specify: ☒ agricultural project or ☐ urban project ☐ individual application or ☒ joint application

2. Proposal title—concise but descriptive: Sub-basin Level Water Measurement Program to Partially Address CALFED Quantifiable Objectives 6, 13, 20, 24, 27, 30, 35; Priority Outcomes 24 and 29

3. Principal applicant—organization or affiliation: Reclamation District 108

4. Contact—name, title: Luther Hintz, General Manager

5. Mailing address: 975 Wilson Bend Rd., P.O. Box 50, Grimes, CA 95950

6. Telephone: (530) 437-2221

7. Fax: (530) 437-2248

8. E-mail: luhintz@colusanet.com

9. Funds requested: Phase 1: $268,000; Phase 2: $1,156,000; Phase 3: $6,332,000

10. Applicant cost share funds pledged—dollar amount: $_____

11. Duration—(month/year to month/year): June 2001 to December 2004

12. State Assembly and Senate districts and Congressional district(s) where the project is to be conducted: State Assembly District 2 (Richard Dickerson); State Senate District 4 (K. Maurice Johannessen); Congressional Districts 2 (Wally Herger) and 4 (Doug Ose)

13. Location and geographic boundaries of the project: Service areas of Anderson-Cottonwood I.D., RD 108, Glenn-Colusa I.D., Princeton-Codora-Glenn I.D., Maxwell I.D., Colusa Basin Drain MWC, Sutter MWC, Pelger MWC, RD 1004, M&T Chico Ranch, and Natomas-Central MWC is Shasta, Glenn, Colusa, Yolo, Sutter, Butte, and Sacramento counties, CALFED Sub-Regions 1, 3, and 4

14. Name and signature of official representing applicant. By signing below, the applicant declares the following:
— the truthfulness of all representations in this proposal
— the individual signing the form is authorized to submit the application on behalf of the applicant
— the applicant will comply with contract terms and conditions identified in Section 11 of this PSP

Luther Hintz _____ _____
(printed name of applicant) *(date)*

_____
(signature of applicant)

B. Scope of Work

Relevance and Importance

Abstract

The Sacramento River Basin-wide Water Management Plan (BWMP) Sub-basin Level Water Measurement Program is intended to facilitate improved water management at a sub-basin level. Currently, water management and measurement occur primarily at a district level throughout the Sacramento Valley. Several of the larger Sacramento River Settlement Contractors have been working cooperatively with the U.S. Bureau of Reclamation and the California Department of Water Resources since 1997 to develop the BWMP, which evaluates existing and future basin water requirements, supplies, and potential management options that will improve overall basin-wide water management and use, while providing environmental benefits.

Among the many BWMP recommendations is to manage water among districts and, ultimately, other entities at a hydrologic sub-basin level. This would help to optimize the efficient use of surface water and groundwater supplies and achieve the appropriate level of drain and return flow water use between water users located within a given sub-basin. Management at this level requires that water inflows and outflows be tracked and quantified. Currently, measurement capabilities do not exist at the locations necessary to support such tracking at a sub-basin level. This proposal identifies the necessary study/design, selection of measurement locations, and construction level of effort and related costs to implement a SCADA-based water measurement program capable of providing real-time measurement for the following sub-basins included in the BWMP:

- Redding Sub-basin (Anderson-Cottonwood Irrigation District)
- Colusa Sub-basin (Reclamation District 108, Glenn-Colusa Irrigation District, Princeton-Codora-Glenn Irrigation District, Provident Irrigation District, Maxwell Irrigation District, Colusa Drain Mutual Water Company, and Tehama-Colusa Canal Authority)
- Sutter Sub-basin (Sutter Mutual Water Company, Pelger Mutual Water Company, Meridian Farms Mutual Water Company, and Tisdale Irrigation District)
- Butte Sub-basin (Reclamation District 1004, M&T Chico Ranch)
- American Sub-basin (Natomas Central Mutual Water Company)

The BMWP represents an existing and successful multi-stakeholder planning process currently underway. The development of the plan has resulted in the identification of water requirements, supplies, and recommended options for optimizing water management. Water management at a sub-basin level is recommended in the BWMP as a beneficial method of assisting in improving water supply reliability, water quality, and maximizing environmental benefits, including reducing river diversions during critical periods to support fishery and wildlife resources. A critical step toward sub-basin management is the ability to measure inflow and outflow at a sub-region level. It is recognized that such an effort will require coordination across several user groups; the cooperative development of recommendations such as this program among the Settlement Contractors, Reclamation, and DWR has been a major step in developing the necessary support for such a program. **The ability to measure inflow and outflow at this hydrologic level contributes toward achieving Quantifiable Objectives 6, 13, 20, 24, 27, 30, 35, 57, and 65 as well as Priority Outcomes 24 and 29.**

Consistency With Local And Regional Water Management Plans and Need for Project

Basin and Local Water Management Initiatives. The proposed program is an outgrowth of the ongoing BWMP and supports the objectives of the BWMP, including providing sustainable water supplies across the Sacramento River basin, maximizing environmental benefits, and enhancing partnership opportunities. The proposed program would also support activities identified in the proposed agreement related to the resolution of Phase 8 of the State Water Resources Control Board (SWRCB) Bay-Delta Water Rights Hearings, which specifically identifies the BWMP as a "model" to follow across the entire Sacramento Valley.

Within the Redding Sub-basin, the Anderson-Cottonwood Irrigation District (ACID) is one of 14 water purveyors working with the Redding Area Water Council on a regional water resources planning effort that began in 1996. In Phase 1, current land uses and associated water demands were quantified for each purveyor. Current efforts are geared toward defining the core elements of a plan for regional management of the Redding Basin's water resources through the year 2030. This proposal is consistent with the core elements of the regional plan because it will help quantify water inflow and outflow at key locations within the Redding Sub-basin and assist in evaluating future water management options.

Within the Colusa Sub-basin, water users began coordinated sub-basin management through the transfer of water between water users. This is possible because of the flexibility in project water transfers provided by the Central Valley Project Improvement Act (CVPIA). This sub-basin management has resulted in improved community relations and communication and has not increased consumptive use of water within the sub-basin. This management will assist in sustaining long-term production agriculture and is based on the collective knowledge of historical flows and water needs within the sub-basin, together with a mutual trust and desire to optimize water management. This proposal will allow these water user to take another major step in optimizing water management and ensuring sustainable agriculture in the Sacramento Valley.

Within the American Sub-basin, sub-basin management efforts have begun through the Sacramento Area Water Forum (of which Natomas Central Mutual Water Company is a member). Various potential groundwater and conjunctive use projects are being investigated by the Sacramento North Area Groundwater Management Authority and the American River Basin Cooperating Agencies. The proposed water measurement program complements these ongoing efforts.

California Public Policy. California public policy emphasizes efficient use of developed water supplies. The California Constitution and the California Water Code prohibit "waste or unreasonable use" of water and exclude from water rights any water not reasonably required for beneficial use. The State Water Resources Control Board (SWRCB) places water conservation conditions on water rights permits that it approves.

Central Valley Project Improvement Act. The CVPIA calls for development of water conservation criteria "with the purpose of promoting the highest level of water use efficiency reasonably achievable by project contractors."

CALFED Bay-Delta Program. CALFED's Water Use Efficiency Program is intended to help ensure that California's water is used efficiently and results in multiple benefits. Many CALFED agencies, such as DWR, Reclamation, and the Natural Resource Conservation Service, also are implementing ongoing water management programs. The Water Use Efficiency Program focuses on improvements in local water use management and efficiency, including the agricultural water use sector.

Need for Project. The local, regional, state, and federal water management programs and policies discussed above all have agricultural water conservation elements. A keystone of all of these

programs and policies is the ability to measure water use as a prerequisite to managing water supplies and measuring the success of any conservation program. The CALFED Water Use Efficiency Program has "quantifiable objectives" for improvements in water management that can be measured or otherwise tracked to ensure that such improvements occur. CALFED, in association with the California Legislature, CALFED agencies, and stakeholders, is developing legislation to require appropriate water use measurement for all California water users. This proposal represents an initiative by the participants of the BWMP to develop the capability to measure flows into, out of, and within five sub-basins to facilitate improved management.

Nature, Scope, and Objectives of Project

The program would provide flow measuring devices in each sub-basin covered under this proposal, including the Redding, Colusa, Butte, Sutter, and American sub-basins. These sub-basins generally correspond to CALFED Sub-regions 1, 3, 4, and 7.

The scope of this program includes extending flow measurement capability to the sub-basin level. Currently, water management and measurement occur primarily at the district level throughout the Sacramento Valley. All of the water companies and irrigation districts represented in this proposal are participants in the development of the BWMP. Among the many recommendations of the BWMP is to manage water at a hydrologic sub-basin level. This would help to optimize the efficient use of surface-water and groundwater supplies and achieve the appropriate level of drain and return flow water use between water users located within a given sub-basin. Management at this level requires that sub-basin inflows and outflows be tracked and quantified.

The objectives of this proposal are to identify the necessary study/design/environmental documentation, selection of measurement locations, and construction level of effort and to implement a water measurement program capable of providing real-time measurement for the sub-basins included in the BWMP and identified herein. **Measuring inflow and outflow at this level is a necessary initial step toward making progress in achieving Quantifiable Objectives 6, 13, 20, 24, 27, 30, 35, 57, and 65, as well as Priority Outcomes 24 and 29.**

The proposed program would be managed by Luther Hintz, General Manager, Reclamation District 108, with the assistance of the following four sub-basin coordinators (Mr. Hintz will also oversee the Colusa Sub-basin related activities): **Redding Sub-basin** – Dee Swearingen (Manager – Anderson-Cottonwood Irrigation District), **Sutter Sub-basin** – Max Sakato (Manager – Sutter Mutual Water Company), **Butte Sub-basin** – Gary Bailey (Manager – Reclamation District 1004), **American Sub-basin** – Peter Hughes (Manager – Natomas Central Mutual Water Company).

Technical/Scientific Merit, Feasibility, Monitoring, and Assessment

Methods, Procedures, and Facilities

Phase/Task 1: Select and Determine Feasibility of Measurement Locations. Initial effort will focus on collecting and reviewing existing information to assist in identifying the appropriate hydrologic locations to install measurement facilities within each of the sub-basins. Meetings will be held with program participants/sub-basin coordinators to ensure a consistent approach and sharing of information across sub-basins. Meetings will be held with the primary CVP water users within each sub-basin, including Settlement Contractors, Water Service Contractors, and USFWS refuge managers that use CVP supplies, to assist in developing appropriate measurement locations. This task will focus on existing knowledge of potential locations, including specific district knowledge and studies, existing and likely future land use and ownership, and associated facilities and infrastructure that may be required to support measurement at each location.

This task also will include additional investigation (including site reviews) to ensure the feasibility of all locations. Selection factors will include: hydrology (known or determined appropriate location to measure sub-basin inflow or outflow), existing/future land use, ownership, accessibility, and minimizing environmental impacts. The following summarizes some of the known potential locations for each sub-basin:

Redding Sub-basin: Anderson Creek, Crowley Gulch, NF Cottonwood Creek, Cottonwood Creek, Battle Creek, Bear Creek, Cow Creek

Colusa Sub-basin: Tehama-Colusa Canal (at Stony Creek), Willow Creek, Logan Creek, Boundurant, Colusa Drain (at Maxwell Diversion, Highway 20, Davis Weir, Tule Road, Knights Landing), Northeast Drain, Stone Corral Creek, Freshwater/Salt Creek, Powell Slough, Riggs Pumping Plant, Rough and Ready Pumping Plant, El Dorado Pumping Plant, Knights Landing Ridge Cut

Sutter Sub-basin: (south) RD 1500 Main Drain Pumping Facilities (Kamack), SMWC Main Canal (below Tisdale Pumping Plant), SMWC West Canal (below Tisdale Pumping Plant) SMWC East Canal, SMWC Central Canal; **(north)** RD 70 Pumping Plant, RD 1660 Main Pumping Plant, #2, #3, and #4), miscellaneous locations.

Butte Sub-basin: Big Chico Creek, Little Dry Creek, Cherokee Canal, Drumheller Slough, Angel Slough, Howard Slough

American Sub-basin: Natomas Cross Canal, RD 1000 Pumping plant, miscellaneous locations

The culmination of this task (and accordingly Phase 1) will be documentation and selection of appropriate and feasible water measurement locations and feasibility-level facility recommendations to support Phase 2, Design of Measurement Facilities/Environmental Compliance. The document will be prepared in cooperation with the water users identified above and circulated for final review among this group to obtain approval from all participants.

Phase 2 - Tasks 2A and 2B: Design of Measurement Facilities and Environmental Compliance. Facility types (e.g., weir structures) will be evaluated and designed based on site-specific hydraulic and site conditions and sized appropriately for existing and projected in-channel flows. Hydraulic modeling will be conducted for the larger facilities, where necessary, to support facility sizing. Construction specifications will be developed for each facility to allow for construction by District personnel or outside construction contractors. The proposed level of effort and estimated design cost are based on the assumption that all facilities listed above for each sub-basin are selected and subsequently designed; any change in facility selection during Phase 1 would affect the estimated Task 2A cost.

This task will include preparation of an environmental document (anticipated to be an Environmental Assessment/Initial Study [EA/IS]) in accordance with NEPA and CEQA, respectively, and acquisition of all necessary permits. Included are scoping, preparation of an administrative draft (in close coordination with the preliminary design effort), public review draft, and final draft.

Phase 3 - Tasks 3A and 3B: Construction/Installation of Measurement Facilities and Construction Management and Inspection. These tasks will include the construction/installation of all measurement facilities and construction management and inspection. It is assumed that identified measurement facilities will be constructed; therefore, this proposal reflects costs associated with installing these devices. The cost of construction related to installing the smaller-scale measurement devices within district boundaries is proposed to be partially assumed by the districts as an in-kind service for those locations. The attached proposed level of effort and estimate for design cost are based on the

assumption that all facilities listed above under Phase 1 for each sub-basin are selected and subsequently designed; any change in facility selection during Phase 1 or 2 will affect the proposed budget for this task.

Other Tasks

Task 4 - Operation and Maintenance. Operation and maintenance (O&M) of all devices is proposed to initially be accomplished by the district within (or adjacent to) which a device is located. O&M is considered in this proposal to be an in-kind, cost-sharing service. Future O&M may be performed by a sub-basin management entity if such an entity is determined to be necessary to support other sub-basin-wide management efforts.

Task 5 - Contract Management and Administration. This task, to be undertaken by Luther Hintz (General Manager, RD 108) and the sub-basin coordinators, incorporates management of program costs and schedule, administering grant funds, developing work plans, coordinating with other entities and agencies, and overseeing activities of the program team.

Schedule

Figure 1 shows the Project Timeline. Figure 2 shows costs distributed through the project duration.

Monitoring and Assessment

The proposed program includes the operation and maintenance of each facility. Information provided by each measuring facility will be made available to all water purveyors within each sub-basin, as well as to Reclamation and DWR. The appropriate level and frequency of flow measurement data collection will be determined in association with those entities within each sub-basin, as well as with Reclamation and DWR.

C. Outreach, Community Involvement, and Information Transfer

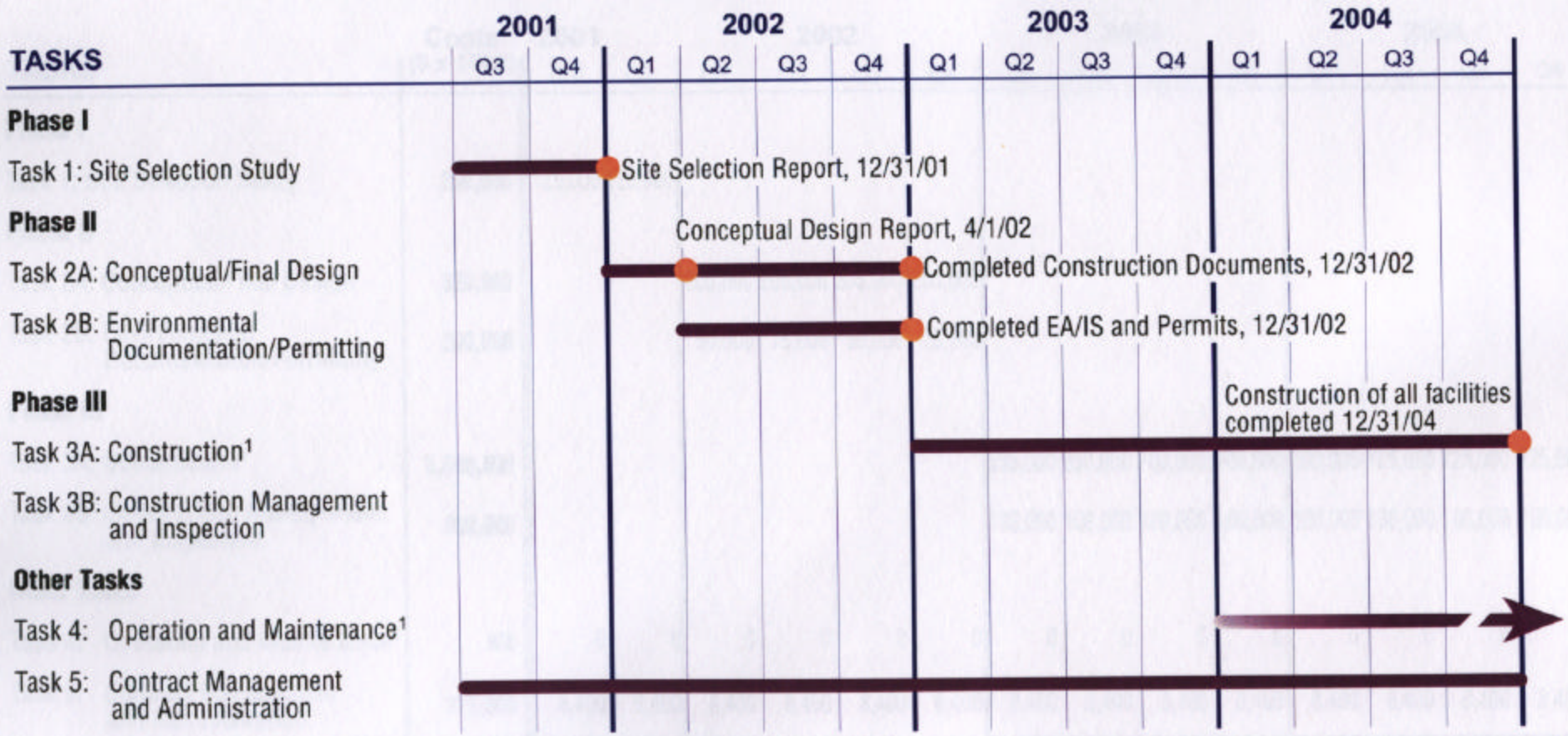
Project Outreach and Benefits

The proposed program is an outgrowth of the ongoing BWMP. During the development of the BWMP, numerous meetings have been and continue to be held, including monthly management meetings of participating water contractors (i.e., Settlement Contractors) with DWR and Reclamation staff, and presentations made. Informational meetings have been and are continuing to be held with Settlement Contractor Boards of Directors, as well as other water users (including the Tehama-Colusa Canal Authority) and environmental interest groups to solicit stakeholder input and disseminate information about the BWMP.

The proposed flow measurement devices will provide the capability to more flexibly and efficiently manage the amount and timing of diversions. This will result in higher instream flows that would benefit all downstream users and improve aquatic ecosystem conditions. Because optimized management of agricultural irrigation water supplies makes more water potentially available for other beneficial uses, this program will benefit all Californians.

Training, Employment, and Capacity Building

Although the program *per se* does not *directly* involve training, employment, or capacity building, it does support the ultimate goal of more efficient management of agricultural water supplies. This, in turn, will potentially make more water available for beneficial uses and economic growth.



[1]Completion date is for all facilities; some facilities can be installed and subsequently operated prior to overall completion date.

FIGURE 1
PROJECT TIMELINE
SUB-BASIN LEVEL WATER MEASUREMENT PROGRA

3125_06 (2/13/01)

TASKS	Costs ($ x 1000)	2001		2002				2003				2004			
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase I															
Task 1: Site Selection Study	**250,000**	125,000	125,000												
Phase II															
Task 2A: Conceptual/Final Design	**820,000**			205,000	205,000	205,000	205,000								
Task 2B: Environmental Documentation/Permitting	**200,000**			50,000	75,000	50,000	25,000								
Phase III															
Task 3A: Construction[1]	**5,640,000**							535,000	650,000	700,000	700,000	700,000	725,000	725,000	725,000
Task 3B: Construction Management and Inspection	**800,000**							100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Other Tasks															
Task 4: Operation and Maintenance[1]	**n/a**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Task 5: Contract Management and Administration	**117,600**	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400
	7,827,600	**133,400**	**133,400**	**263,400**	**288,400**	**263,400**	**238,400**	**643,400**	**758,400**	**808,400**	**808,400**	**808,400**	**833,400**	**833,400**	**833,400**

[1]Completion date is for all facilities; some facilities can be installed and subsequently operated prior to overall completion date.

3125_07 (2/14/01)

FIGURE 2
PROJECT EXPENSE SCHEDULE
SUB-BASIN LEVEL WATER MEASUREMENT PROGRAM

Disseminating Information

The intent of the proposed program is to increase the ability to measure water inflows and outflows and make this information available to all entities within each sub-basin, as well as to Reclamation and DWR. The availability of this information will allow for improved ability to track flows into and out of sub-basins and promote the benefits associated with managing supplies at a sub-basin level. All parties to this proposal are participants in the BWMP, which recommended sub-basin water measurement. The ongoing planning effort associated with the development of the BWMP provides a formal framework for disseminating inflow/outflow information.

D. Qualifications of the Applicants, Cooperators, and Establishment of Partnerships

Applicant Qualifications

The resume of Lu Hintz, RD 108 General Manager, is attached.

External Cooperators

It is not anticipated that the program will require additional assistance from any other entity or agency. The potential exists that some measurement facility locations may be in areas not within the boundaries of the district participants. In such cases, the siting of such facilities will be coordinated directly with the affected landowners to the mutual satisfaction of the participating districts and landowners. If agreement cannot be reached, the site will be eliminated from consideration.

Partnerships

The proposed program is an outgrowth of the ongoing successful Sacramento River BWMP. The nature of the proposed program is to further build on partnerships that have been established and advanced among the Sacramento River Settlement Contractors, Reclamation, and DWR in preparing the BWMP. The basin-wide nature of the program dictates that actions must be taken by a partnership among ACID, RD 108, SMWC, RD-1004, and NCMWC to lead the development of improved water measurement capabilities on behalf of five separate sub-basins across the Sacramento Valley. The implementation of the proposed program is a necessary first step toward water supply management at a sub-basin level, which, in turn, would foster the development of numerous additional partnerships across each sub-basin.

The Sacramento River Settlement Contractors involved in the BWMP and this application have participated in the extensive discussions that have led to the draft Sacramento Valley Settlement Agreement currently being considered by the SWRCB in Phase 8 of the Bay-Delta hearings. The Settlement Agreement forms a partnership between Sacramento Valley water right holders, water users within the export areas, DWR, and Reclamation that has never been achieved to this magnitude in history. The Settlement Agreement recognizes the need to increase the overall water supplies available to all water users throughout the state and that a cooperative approach is the most effective means to meet this need. The Settlement Agreement and associated projects must be pursued in unison with CALFED goals, objectives, and program. The proposed program meets the common goals of the Settlement Agreement and CALFED.

E. Costs and Benefits

Attached Table 1 provides the required budget information for the program, including a breakdown of costs by task, cost category, and calendar year. Costs shown are in year 2000 dollars and are not adjusted for inflation. Tasks 1, 2a, 2b, and 3b will be performed by an engineering/environmental consultant. Task 3a will be performed by a construction contractor. Task 4 will be performed by entities across the Sacramento Valley who ultimately operate each of the selected measurement facilities. Task 5 will be performed by RD 108, and the sub-basin coordinators.

Salaries and Wages

Salaries and wages associated with Task 5, Contract Management and Administration, assumes 40 hours per month for the RD 108 General Manager and 8 hours per month for each of the sub-basin coordinators.

Supplies

See discussion under Cost Share Contribution below.

Service Contracts – Construction

Construction costs were estimated based on the facilities described in this proposal. Of the overall construction cost estimate of $5.5 million, approximately 60 percent is estimated to be associated with new weirs and the remaining 40 percent associated with pipe and acoustical stage measurement devices. The estimate includes a 30-percent contingency, reflecting the large program area, but does not include any costs for environmental mitigation or land acquisition.

Travel

Travel costs associated with Task 5 Contract Management and Administration were estimated at $200 per month for driving to meetings and potential facility sites.

Other Direct Costs – Consultants

Costs estimated for consultant contracts were based on the anticipated level of effort required to complete the tasks described in this proposal. Engineering effort is tied to the number and type of structures to be designed and constructed, and the data collection/site selection processes necessary to proceed with design. It is expected that this program will result in approximately 74 new measurement facilities ranging from weirs to acoustical flow and stage measurement devices.

Cost Share Contribution

Cost-share in the form of operation and maintenance of the new facilities in perpetuity is assumed to be approximately 1 percent of the total estimated construction cost of $5.5 million. This figure is uncertain given the location of facilities across the Sacramento Valley and will not be determined until the completion of the Phase 1 Site Selection Study. The present worth of these O&M activities is $787,000, assuming a program life of 30 years and an interest rate of 6 percent per year.

Benefit Summary and Breakdown

This program would provide the capability to measure sub-basin level inflows and outflows to allow for improved water management, including the amount and timing of diversions from the Sacramento River. The physical changes envisioned, in terms of new facilities, are summarized in Section B of this proposal. The principal outcomes of the program will be substantially increased ability to track water inflows and outflows to allow for the potential for decreased diversions from

the Sacramento River during critical periods. Corresponding higher instream flows, which free up water for other beneficial uses, would benefit all downstream users and improve aquatic ecosystem conditions for aquatic and terrestrial habitats. The program would benefit all sub-basin water users by increasing the potential for reliability and flexibility of water deliveries. These are not quantifiable benefits, but the additional information provided by the proposed program is inherently beneficial to water management planning efforts at all levels.

Assessment of Costs and Benefits

Quantified costs of the proposed program are detailed in Table 1, as described above. Quantified benefits are not possible to identify because proposed program represents the initial phases of a sub-basin management program and the sites have not yet been identified. Non-quantifiable benefits include overall improved water management at a sub-basin level with associated potential decreases in diversions during critical periods as well as contributing toward meeting the quantifiable objectives and outcomes discussed above. The value of water that could be made available for other in-basin and out-of-basin uses could certainly exceed many millions of dollars.

F. Matching Funds Commitment Letter

If the BWMP Sub-basin Level Water Measurement Program is funded, RD 108 will provide an institutional cost-sharing agreement letter signed by appropriate official once the location of each facility is identified.

G. Letter of Concurrence from Local Government

If the BWMP Sub-basin Level Water Measurement Program is funded, RD 108 will provide a letter signed by an official authorized to declare that this program is compatible with existing programs, the local general plans, and other local and regional activities.

H. Environmental Documentation

Timing of Environmental Documentation and Permitting in Relation to Project Funding

The Proposal Solicitation Package (page 13, Item H) states that permitting and environmental documentation requirements must be met prior to funding disbursement. This proposal is for a phased program that includes environmental documentation and permitting as tasks under Phase 2 of the program (Task 2B). The NEPA/CEQA documentation may be tiered off the CALFED Programmatic EIS/EIR and incorporate appropriate mitigation measures from the CALFED Record of Decision. We propose that all necessary permits identified during Phase 2 will be acquired and environmental documentation will be completed during Phase 2, prior to initiation of construction.

Attachments

Table 1
Budget Summary and Breakdown

Table 1
BWMP Sub-basin Level Water Measurement Program
Budget Summary and Breakdown

Item	Rate ($)	Units	Quantity	Total Cost	Life (Years)	Present Value	Local Share ($)	CALFED Request ($)
a. Salaries and Wages								
Task 4	40,000	$/year	30	$1,200,000	30	$551,000	$551,000	$0
Task 5	2,800	$/month	42	$117,600	n/a	$117,600	$0	$117,600
b. Fringe Benefits	[None - no indirect cost included with this project]							
c. Supplies								
Task 4 annual costs	10,000	$/year	30	$300,000	30	$138,000	$138,000	$0
d. Equipment	[None – constructed facilities provided through item e below]							
e. Services (Construction - Task 3A)								
Weirs[1]	2,990,000	$	1	$2,990,000	30	$2,990,000	$0	$2,990,000
Stage/discharge[2]	1,300,000	$	1	$1,300,000	30	$1,300,000	$0	$1,300,000
Pipes[3]	1,170,000	$	1	$1,170,000	30	$1,170,000	$0	$1,170,000
f. Travel								
Task 5	200	$/month	42	$8,400	n/a	$8,400	$0	$8,400
g. Other Direct Costs (Consultants)								
Task 1	250,000	$	1	$250,000	n/a	$250,000	$0	$250,000
Task 2A	820,000	$	1	$820,000	n/a	$820,000	$0	$820,000
Task 2B	200,000	$	1	$200,000	n/a	$200,000	$0	$200,000
Task 3B	800,000	$	1	$800,000	n/a	$800,000	$0	$800,000
h. Total Estimated Costs; Total of Items a through g						**$8,345,000**	**$689,000**	**$7,656,000**

Notes:

1. Total for construction of 74 facilities/measuring devices.

Table 2
Summary of Quantified and Non-quantified Costs and Benefits

Table 2
BWMP Sub-basin Level Water Measurement Program
Summary of Quantified and Non-Quantified Costs and Benefits

Item	Rate ($)	Units	Quantity	Total Cost	Life (Years)	Present Value	Beneficiary
Quantified Costs							
Administration labor	2,800	$/month	42	$117,600	n/a	$117,600	n/a
Administration travel	200	$/month	42	$8,400	n/a	$8,400	n/a
O&M labor	40,000	$/year	30	$1,200,000	30	$551,000	n/a
O&M supplies	10,000	$/year	30	$300,000	30	$138,000	n/a
Construction	5,460,000	$	1	$5,460,000	30	$5,460,000	n/a
Consultants	2,070,000	$	1	$2,070,000	n/a	$2,070,000	n/a
Subtotal						**$8,345,000**	
Quantified Benefits							
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Subtotal						**$0**	
Non-Quantified Costs							
None	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Non-Quantified Benefits							
Improved water management across all sub-basins	n/a	n/a	n/a	n/a	n/a	n/a	All sub-basin users/out-of sub-basin users
Improved ability to provide environmental benefits	n/a	n/a	n/a	n/a	n/a	n/a	Environmental resources/ environmental interest stakeholders
Fostering of sub-basin level management actions including conjunctive use, drainwater management improvements	n/a	n/a	n/a	n/a	n/a	n/a	All sub-basin users/out-of sub-basin users
Improved delivery reliablility and flexibility	n/a	n/a	n/a	n/a	n/a	n/a	All sub-basin users/out-of sub-basin users
Enhanced contribution to water planning initiatives across the Sacramento Basin	n/a	n/a	n/a	n/a	n/a	n/a	All sub-basin users/out-of sub-basin users

Project Manager Resume
Luther Hintz, RD 108 General Manager

Letters of Notification